REMARKS / DISCUSSION OF ISSUES

Claims 1-17 are pending in the application.

The applicants thank the Examiner for acknowledging the claim for priority and receipt of certified copies of all the priority document(s).

The applicants also thank the Examiner for acknowledging that the drawings are acceptable.

Claims are amended for non-statutory reasons: to correct one or more informalities, remove figure label number(s), and/or to replace European-style claim phraseology with American-style claim language. The claims are not narrowed in scope and no new matter is added.

The Office action objects to claims 9-12; claims 9 and 10 are amended to remove references to multiple claims.

The Office action rejects claims 1-16 under 35 U.S.C. 112, second paragraph. The applicants respectfully traverse this rejection, but in the interest of advancing prosecution in this case, the phrase "adapted to" is changed to "configured to". The meaning and scope of the claims is unchanged.

The Office action rejects claims 1-5, 8, and 13-17 under 35 U.S.C. 103(a) over Durham et al. (USP 5,964,866, hereinafter Durham) and Singh et al. ("MOUSETRAP: Ultra-High-Speed Transition-Signaling Asynchronous Pipelines", hereinafter Singh). The applicants respectfully traverse this rejection.

Claim 1, upon which claims 2-16 depend, claims a device that includes a mousetrap buffer for exchanging data with one of the clocked devices, and a synchronizer that synchronizes a change in signalling output with a clock of the clocked device. Claim 17 includes a similar limitation.

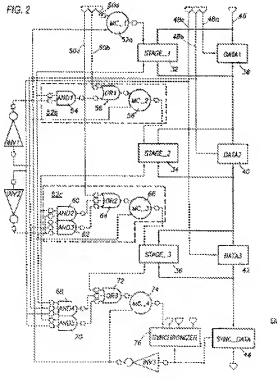
The Office action notes that Singh teaches a mousetrap buffer and that Durham teaches a synchronizer, and asserts that one of skill in the art would have used the mousetrap buffers as taught by Singh in the system of Durham. The applicants respectfully disagree with this assertion.

The Examiner's attention is requested to MPEP 706.02(j), "Contents of a 35 U.S.C. 103 Rejection", wherein it is stated that:

> "the examiner should set forth in the Office action:
> (A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate,
> (B) the difference or differences in the claim over the applied reference(s),
> (C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and
> (D) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification."

The Office action fails to set forth the proposed modification of the references to arrive at the claimed subject matter. The Office action fails to identify how Durham's design can be modified to accommodate Singh's mousetrap buffer. The Office action equates Durham's element 36 to a latch, and asserts that one of skill in the art would Singh's mousetrap buffer in lieu of Durham's latch in Durham's system.

Durham's system is illustrated in Durham's FIG. 2 (below, left); Singh's system is illustrated in Singh's FIG. 1 (below, right):



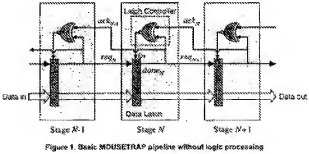


Figure 1. Basic MOUSETRAP pipeline without logic processing

Of particular note is the difference between the control of the latch in each of these systems, the control of the latch being a distinguishing feature of a mousetrap buffer. In Durham's system, element 52c is configured to control Durham's Stage_3 (36). In a mousetrap buffer as taught by Singh, a Latch Controller (XNOR) is configured, in combination with the req_n signal, to control Singh's Data Latch in mousetrap buffer Stage N.

Durham's controller 52c uses six different inputs to control the latch 36; Singh's controller uses three different inputs to control the Data Latch. The applicants respectfully maintain that it is not apparent how the six control inputs of Durham would be mapped to the three control inputs of Singh's mousetrap buffer, and it is not apparent that Durham's system will operate properly when reconfigured to use a mousetrap buffer in lieu of Durham's latch 36. Of particular note, Durham's Muller-C element 66 in Durham's controller 52c is a sequential device (its output is dependent upon its prior state) whereas Singh's Latch Controller is a combinatorial device (its output is independent of its prior state), and thus the control of the latch element in each of these systems is fundamentally different. Absent some reasonable expectation of success, one of skill in the art would not be motivated to replace Durham's latch 36 with Singh's mousetrap buffer in view of Durham's substantially different control of the latch 36.

Additionally, the courts have consistently upheld the principle that:

> "It is impermissible to use the claims as a frame and the prior-art references as a mosaic to piece together a facsimile of the claimed invention." *Uniroyal Inc. v. Rudkin-Wiley Corp.,* 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

In KSR Int'l. Co. v. Teleflex, Inc., the Supreme Court noted that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and that it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed:

> "Often, it will be necessary ... to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit." KSR, slip op. at 14.

Durham teaches a system that facilitates the bypassing of pipeline stages in response to explicit stage-enable signals (48a-48c in Durham's FIG. 2, above). The Office action provides no apparent reason to replace Durham's stage_3 with a mousetrap buffer, other than to merely assert that the proposed combination will "more efficiently synchronize the pipeline data". This assertion of higher efficiency is unsupported in the Office action, and not apparent from the teachings of either Durham or Singh. The Office action fails to present an explicit analysis to support the assertion that one of skill in the art would have determined, or even estimated, that the use of a mousetrap buffer in lieu of Durham's stage_3 would provide a more efficient synchronization of Durham's pipeline.

Because there is no apparent reason that one of skill in the art would replace Durham's latch with Singh's mousetrap buffer, and because the Office action fails to identify a modification of Durham to accommodate Singh's mousetrap buffer that provides a reasonable expectation of successful operation, the applicants respectfully maintain that the rejection of claims 1-5, 8, and 13-17 under 35 U.S.C. 103(a) over the combination of Durham and Singh is unfounded, and should be withdrawn.

In view of the foregoing, the applicants respectfully request that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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